Caregiver and Teacher Expectations Predict GPA and College Search Behaviors in African-American Adolescents

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Abstract

The purpose of this work was to examine how caregiver and teacher educational attainment expectations for fifth grade students relate to those students' academic performance and college preparation behaviors in their senior year of high school. Using an African-American student sample, this study shed light on predictors of educational outcomes for African-American students. Data from 563 African-American students in Grades 5 and 12 as well as their female caregivers and teachers were analyzed. The results indicated that teacher educational expectations for 5th grade students were a significant predictor of students' GPA and college search behaviors in Grade 12. Caregiver educational expectations did not predict either students' Grade 12 college search behaviors or Grade 12 GPA. Teacher expectations were significantly and positively correlated with students' school engagement in Grade 5. These findings supplement previous research on the external, social factors related to academic performance and attainment for African-American students.

Caregiver and Teacher Expectations Predict GPA and College Search Behaviors in African-American Adolescents

As students progress through school, adults in positions of influence such as parents and teachers can impact the educational opportunities and resources available to those students. From providing direct help with schoolwork to indirectly shaping students' beliefs about their academic potential, teachers and parents are in unique positions to assist students in reaching educational success. One such marker of this success continues to be the attainment of postsecondary education. College enrollment and completion remains a widely supported academic goal for many students, and is often touted as a gateway to career success with proven economic and noneconomic benefits (Bengali & Daly, 2014; Ma, Pender, & Welch, 2016). Yet, despite the well-understood advantages of earning a college degree, certain demographic groups, including African-Americans, continue to be underrepresented in higher education (Charles, Roscigno, & Torres, 2007; Musu-Gillette et al., 2017). With this study, I explore how parents' and teachers' expectations for students' educational attainment are related to African-American students' later academic performance and college preparation behaviors – outcomes closely tied to the likelihood of attending college.

Parent and Teacher Influences on Adolescents' Academic Motivation

Education researchers recognize that numerous social factors play prominent roles in shaping adolescent development and academic achievement (e.g., Schachter & Ventura, 2008; Steinberg, 2001; Wang & Eccles, 2013; Wentzel, 1998). Adolescents' interactions with influential adults such as parents and teachers impact adolescents' beliefs about their own academic abilities, educational goals, and identity as a student (Parsons, Adler, & Kaczala, 1982; Spinath & Spinath, 2005). During the school-age years, youth spend the majority of their time in

school or at home. As such, these frequent interactions children have with their parents and teachers become a primary source of information on how others view their academic potential (Harrell-Levy & Kerpelman, 2010; Schachter & Ventura, 2008). Adolescents thus incorporate information from these influential "identity agents" into their own academic self-concepts (Harrell-Levy & Kerpelman, 2010; Schachter & Ventura, 2008). This process, in turn, motivates certain behaviors and interests in school. For instance, warm and praise-filled interactions with teachers are associated with a more positive academic self-concept for students in both elementary (Chen, Thompson, Komrey, & Chang, 2011; Harris, Rosenthal, & Snodgrass, 1986; Hughes, 2011; Leflot, Onghena, & Colpin, 2010) and middle school (Bouchey & Harter, 2005; Ryan, Stiller, & Lynch, 1994; Wang & Eccles, 2013; Wentzel, 1998). Similarly, higher levels of perceived parental support and involvement are positively associated with students' interest in school and their academic self-concept (Fan & Williams, 2010; Mo & Singh, 2008; Sanders, 1998; Simons-Morton & Chen, 2009; Wentzel, 1994).

Parents and teachers not only influence adolescents' current motivation, but also their developmental trajectories and future educational progress. Students who perform well in school early on—such as those with the advantage of having supportive role models—are able to learn more efficiently and perform better in later years than students who initially struggled with learning or had low motivation (Stanovich, 1986; Walberg & Tsai, 1983). This phenomenon, referred to as the "Matthew Effect," describes a self-reinforcing process in which early advantages beget more advantages later on. Researchers studying the Matthew effect (and the closely related theory of cumulative advantage) have found support for this theory in domains such as reading (Pfost, Hattie, Dörfler, & Artelt, 2014; Stanovich, 1986; Walberg & Tsai, 1983). One consequence of this effect is that it exacerbates performance gaps between high- and low-

achieving students over time. According to this theory, the impact parents and teachers have on young students' academic motivation can have lasting effects on academic performance that may account for meaningful disparities in achievement in more advanced grades, such as high school. Parents and teachers influence which classes a student takes, the help a student receives on schoolwork, the types of challenges a student seeks, and a student's own beliefs about his or her abilities. In doing so, they shape that student's educational path.

The Role of Parent Expectations

As just discussed, parental *behaviors* may directly impact adolescent achievement both in the short-term and the long-run. In the current study, however, I focus on parental *expectations*. The beliefs parents hold about their child's potential for high levels of educational attainment are associated with both these parental behaviors and academic outcomes. Parents who hold high expectations for their children's educational attainment are more likely to support their child's schooling, be involved at the child's school, and encourage the child to aim high and take on challenges (Englund et al., 2004; Zhan, 2005). All of these factors are important to helping students succeed in high school and college. Indeed, parent expectations are positively correlated with students' academic performance (Spera, Wentzel, & Matto, 2009; Wu & Qi, 2006; Zhan, 2005), and parents' expectations and aspirations for their child's educational attainment in early grades predict their involvement in the student's college preparation process later on (Charles et al., 2007). Regardless of the direct mechanisms through which parent expectations operate to influence children's academic outcomes, their expectations serve as a useful indicator of later achievement.

High parent expectations for their children during important transitions, such as middle school and high school, may lead parents to encourage their children to take steps that will

prepare them to do well in high school and be ready for college. Parents might ensure that their child is enrolled in rigorous courses and might assist with college planning behaviors in order to help their child meet these educational expectations. In this study, I will explore how parent expectations for their 5th grade children relate to those students' academic achievement and college preparation behaviors by the end of high school. I control for socioeconomic status and students' Grade 5 achievement because access to resources and student academic abilities are known to shape both parent expectations and achievement outcomes (Charles et al., 2007; Davis-Kean, 2005; Englund et al., 2004; Goldenberg et al., 2001).

Parent Expectations and Educational Utility Beliefs

Because parents' valuation of educational attainment for future success, or their "educational utility beliefs," may also have an impact on their children's educational outcomes, it is unclear which set of parental beliefs (i.e. expectations about educational attainment or their educational utility beliefs) exert a stronger influence. Parents' beliefs about the utility and value of education, not just their confidence in their children's abilities, could motivate students to strive for good grades and prepare for college in order to achieve the model of success presented by their parents. Supporting this idea, a survey of fifth- and sixth-grade students showed that students who perceived that their parents valued academic success were more motivated and had higher perceptions of their own competence, which, in turn, led to higher achievement (Marchant, Paulson, & Rothlisberg, 2001). More generally, parents who hold high attainment expectations for their children likely hold similarly high educational utility beliefs. Parents most likely would not expect their children to undertake the challenging goal of earning a college degree if they did not also believe that there is value in a college education. As such, I expected to find that parent educational utility beliefs positively correlate with parent educational

attainment expectations and students' academic outcomes, but do not fully mediate the relationship between expectations and student outcomes.

Influence of Teacher Expectations

In addition to spending a great deal of time with parents, adolescents spend a substantial amount of time interacting with their school teachers. As such, examining the role of teacher educational expectations, in addition to parental expectations, provides a more comprehensive understanding of adult social influence on students' academic motivation and college search behaviors. Because teachers spend a great deal of time with students in the classroom, they have ample opportunities to observe how engaged a student is in school and how motivated the student is to perform well academically. These student characteristics predict long term academic success (Casillas et al., 2012; Reyes et al., 2012; Noble & Sawyer, 2002; Wang & Holcombe, 2010), and teachers' abilities to accurately identify these traits early on could allow for them to form similarly accurate expectations for a student's success. However, teachers' impressions of their students' characteristics might also influence their interactions with students in ways that amplify these existing traits. Findings from Skinner and Belmont (1993) support this latter phenomenon. These researchers identified a reciprocal relationship between student-teacher interaction quality and students' school engagement as students progressed from 3rd grade through 5th grade. When these students experienced warm and supportive interactions with their teachers, they became more engaged in school and were motivated to perform well academically. Increased engagement, in turn, led teachers to interact even more positively with these motivated students, creating a cycle that carried on from one school year to the next.

Some researchers claim that teacher expectations operate through a "self-fulfilling prophecy" mechanism that causes their expectations to become true (Brophy & Good, 1970;

Raudenbush, 1984; Rosenthal, & Jacobsen, 1968; Rubie-Davies et al., 2006). The famous "Pygmalion study" provided some of the earliest evidence supporting the idea that a teacher's beliefs about a student's academic potential actively influence student-teacher interactions in ways that cause those beliefs to come true (Rosenthal & Jacobsen, 1968). Even though teacher expectations in this experiment had been informed by false scores on a test of intellectual growth potential, Rosenthal and Jacobsen (1968) found that the results of these fake tests "predicted" gains in students' IQ scores over the course of the study. Their explanation for this outcome rested on the idea that teacher expectations gave supposed "high-achievers" the advantage of increased support and attention from teachers in school. Similar studies have also made this claim by replicating Rosenthal and Jacobsen's initial experiment (Raudenbush, 1984) and through showing that high teacher expectations are linked to greater teacher support and praise (Brophy & Good, 1970).

However, others cite methodological issues in these studies and emphasize the small effect sizes many of these researchers find (Jussim, Eccles, & Madon 1996; Jussim & Harber, 2005). These critics argue against a one-way, causal relationship between teacher expectations and student achievement and instead claim that teachers are simply accurate in predicting student achievement (Jussim et al., 1996; Jussim & Harber, 2005). Despite this ongoing debate about causality, both sides find that teacher expectations are nevertheless predictive of students' academic outcomes. If teacher expectations accurately predict students' achievement years after the students are taught by that teacher, this knowledge could be used to identify which students need earlier intervention and support.

Teacher expectations predict achievement most powerfully for certain demographic groups such as African-Americans, girls, and those from lower-socioeconomic status

backgrounds (Hinnant, O'Brien, & Ghazarian, 2009; Jussim et al., 1996; Jussim & Harber, 2005; Sorhagen, 2013). Although Jussim and colleagues (1996) primarily argue that teacher expectations predict future achievement because they are accurate, they concede that the accuracy of teacher expectations for stigmatized groups may indeed be partially due to self-fulfilling prophecies. They explain that the experience of devaluation and discrimination students from these groups can have in school causes students to internalize negative stereotypes about their academic potential, leading to lower academic motivation and performance. If teachers also hold inappropriately low expectations for stigmatized students, these expectations "confirm" students' internalized stereotypes, thus negatively impacting students' academic self-concept and performance more so than it would for students who do not possess internalized stereotypes. Supporting this supposition are studies of students from marginalized, indigenous groups in New Zealand which have shown that teachers' expectations are often more closely related to a student's ethnicity rather than to actual student achievement (Rubie-Davies, Hattie, & Hamilton, 2006; Turner, Rubie-Davies, & Webber, 2015). Specifically, Rubie-Davies and colleagues (2006) found that primary school teachers held higher expectations for students from non-stigmatized groups than they did for students from marginalized groups. Although students from stigmatized ethnic groups did not differ significantly in reading ability from other students at the beginning of the school year, their teachers still held lower expectations about their capacity to improve. By the end of the school year, these students demonstrated the lowest levels of improvement in reading ability, thus confirming their teachers' lowered expectations (Rubie-Davies et al., 2006). The current study attempts to expand on these findings by assessing whether teachers' educational attainment expectations for African-American students predict future achievement and college preparation behaviors controlling for the students' prior achievement.

Teacher expectations and students' school engagement. Students' level of engagement and active participation in the classroom likely inform the expectations a teacher holds, while simultaneously affecting the students' academic achievement and attainment. Students with low engagement tend to receive teacher feedback that lowers engagement even further while students with high engagement have interactions with teachers that raise engagement (Hughes, Luo, Kwok, & Loyd, 2009; Skinner & Belmont, 1993). By definition, students with lower engagement are less interested in actively participating and doing well in school, leading to lower grades and difficulty in "catching-up" should the student become more engaged (Bodovski & Farkas, 2007; Stanovich, 1986). Because teachers struggle to raise a low-motivated student's engagement level, they spend less time supporting those students in favor of highly-engaged students (Skinner & Belmont, 1993; Skinner & Pitzer, 2012). Indeed, the students who report high levels of support from teachers have higher engagement levels, and students with high engagement have higher grades and levels of educational attainment (Jang, Kim, & Reeve, 2016; Klem & Connell, 2004).

When this reciprocal relationship between student engagement and teacher support is established in early grades, it can have a notable effect on a student's educational trajectory. In an analysis of a longitudinal dataset, Klem and Connell (2004) found that teacher support impacted school engagement the most for elementary school students in comparison to students in middle and high school. In addition, Klem and Connell (2004) found that student engagement decreases overall from elementary to high school. Taken together, these results imply that students facing low teacher support in elementary school may have lower engagement and motivation in later grades than students who did not. The general trend of decreasing academic engagement suggests that these early differences in engagement levels will likely be maintained

or exacerbated over time. When elementary school teachers make predictions about students' educational attainment, they may draw on their observations of the students' academic engagement knowing that this student characteristic is positively related to academic outcomes (Jang, Kim, & Reeve, 2016) yet likely to decrease for most over time (Klem & Connell, 2004). Due to this possible phenomenon of teachers basing their expectations on student engagement, I expect to find that students' school engagement in Grade 5 will positively correlate with Grade 5 teacher expectations and Grade 12 outcomes. Although correlational analyses cannot confirm that teacher expectations are based on observations of student engagement, this analysis could provide insight into the value of studying potential causal links in the future.

Knowing from previous research that early parent and teacher expectations are related to students' subsequent achievement warrants examination of how else these expectations may be informative. Before students enter middle and high school, where they are often tracked into higher- or lower-difficulty courses, it is important to identify which students may need additional support to be successful. Doing so may be especially significant for African-American students, as they are underrepresented in higher education. Should parent and teacher expectations in elementary school prove to be an accurate predictor of later outcomes, such as college preparation behaviors, they could serve as a practical measure for identifying these students. Although previous student performance has been shown to predict future performance (Bodovski & Farkas, 2007; Easton, Johnson, & Sartain, 2017; Englund et al., 2004), a deeper understanding of other predictors of achievement and attainment behaviors could provide useful information for future intervention. Understanding the social factors that are related to these academic outcomes after controlling for previous performance could help identify students in need of support who would be missed if relying solely on achievement indicators. Simply knowing that early

expectations for educational attainment may be accurate on some dimensions strengthens the argument that those students facing low expectations need further help in achieving high academic outcomes.

Current Study

To address the question of whether parent and teacher expectations in elementary school predict outcomes related to later college matriculation, I analyzed longitudinal data collected from a sample of African-American students, their caregivers, and their teachers in Grades 5 and 12. In this study, I intended to capture both some of the social predictors of GPA and college search behaviors in Grade 12 as well as observe the relationship of individual characteristics to these associations. To do so, I tested four hypotheses. (1) I anticipated that caregivers' expectations in Grade 5 for their children's educational attainment would predict students' college preparation behaviors and academic performance in Grade 12, controlling for the student's Grade 5 achievement, caregiver's education level, and family income. (2) Furthermore, I expected to find that caregivers' educational utility beliefs would positively correlate with the Grade 5 caregiver expectations and Grade 12 college preparation behaviors and academic performance but would not fully explain the relationship between Grade 5 expectations and these Grade 12 outcomes. This is because I expect that caregiver educational utility beliefs and attainment expectations have similar yet independent relationships to a student's academic outcomes. (3) I also expected to see that teachers' expectations in Grade 5 for students' educational attainment would predict college preparation behaviors and academic performance in Grade 12, controlling for the student's Grade 5 achievement, caregiver's education level, and family income level. (4) Finally, I anticipated that teachers' expectations in Grade 5 would be positively correlated with the student's Grade 5 self-reported school engagement.

Method

Participants

Data for this study came from the Youth Identity Project, a longitudinal study of academic motivation in African-American youth from Grades 5 to 12. For the purpose of this study, I excluded data from students of other races. Participating youth were students at urban, public schools in North Carolina. Although most students in the current sample participated in the first two waves of the study in Grades 5 and 7, additional participants were recruited in Grade 10. Along with the students recruited in Grade 5 (n = 382), 181 new recruits were included in the analyses for this study. The total sample included 563 youth (boys = 250, girls = 313). The median family income category for youth in Grade 5 was $20,000 to $29,999 per year.

In addition to students, parents or guardians and teachers also completed surveys. The current study included data from 250 female caregivers and 355 reports from 28 teachers (26 women, 2 men) at 7 elementary schools. Seventy-five percent of participating teachers identified as Black or African-American. The majority of adult caregiver respondents in the first wave of this project were mothers or grandmothers (89.3%). I excluded data from other caregiving relatives (20 fathers and 10 other relatives or guardians) to avoid overgeneralizing the study's results. Within this sample of female caregivers, 20.4% had obtained a bachelor's degree or higher and 13.3% had less than a high school diploma.

Procedure

At each wave of the study, consent and data collection procedures were the same. After the researchers obtained caregivers' informed consent and students' assent, the students completed questionnaires in small groups during school hours and received a gift as compensation. In this study, I include students' Grade 5 reports of their school engagement and

Grade 12 reports of college search behaviors. The questionnaires incorporated several other measures not discussed in this paper. Students' achievement data in Grades 5 and 12 were obtained from school records.

Caregivers and teachers completed surveys and received gift cards for grocery stores and other local merchants as compensation. Parents and guardians received questionnaires in the mail after giving written consent and returned completed surveys by mail. Caregiver surveys in Grade 5 included measures of their expectations for their child's educational attainment and their educational utility beliefs as well as demographic questions. Teachers completed their surveys at times and locations that were convenient for them. For this report, I used fifth grade teachers' expectations for the student's educational attainment.

Measures

Unless otherwise noted, the following measures were obtained in the first wave of the study when students were in Grade 5. See Appendix A for a list of scale items.

Caregiver educational attainment expectations. Caregivers responded to the question, "How far do you expect your child to go in school?" by placing a check mark next to all levels of education they expected their child to complete. The 7 options ranged from "some high school" to "doctoral degree." The highest level of education checked off on the scale (i.e., a numeral ranging from 1 to 7) was used to designate the caregiver's expectation regarding her child's future educational attainment.

Caregiver educational utility beliefs. Caregivers responded to 24 questions concerning their beliefs about the value of formal education adapted from a scale assessing attitudes about achievement (Mickelson, 1990). Caregivers indicated their agreement with items using a 5-point scale, with options ranging from "strongly disagree" to "strongly agree." For the purposes of this

study, scores from 7 questions created an aggregate measure of caregiver educational utility beliefs ($\alpha = 0.85$). These specific questions were chosen based on their face validity for measuring this construct and their internal consistency. This subset of items assessed parental beliefs about the value of strong academic performance for life success. (e.g., "Doing well in school helps you do better later in life" and "Education is the key to success").

Teacher expectations. Children's fifth grade teachers reported their educational attainment expectations for each student. Similar to the parent questionnaire, teachers placed a check mark next to each level of education they expected the student to obtain out of a list of 7 options. Choices ranged from "some high school" to "doctoral degree." The highest level of education checked off on the scale was used to designate the teacher's expectation for the child's eventual educational attainment.

Students' school engagement. In Grade 5, students rated their agreement with 15 items assessing their classroom engagement (e.g., "I participate when we discuss new material"; "If a problem is really hard, I just quit working on it"). Students rated agreement with each item using a 4-point scale with choices ranging from "not at all true" to "very true." Negatively-worded items were reverse-coded, and all items were averaged to create a composite score of student engagement ($a = 0.74$).

Student academic achievement. In Grade 5, a composite of the students' state End-of-Grade (EOG) scores constituted the measure for student achievement. Public school students in North Carolina take standardized EOG examinations at the end of each school year. In this study, an average of the student's math and language arts EOG percentile scores formed the Grade 5 achievement measure. Student GPA served as the Grade 12 academic achievement measure.

GPA was recorded on a 5-point scale. Both of these achievement measures came from school records.

Students' college preparation behaviors. The Grade 12 student questionnaire included a measure of activities students had completed to prepare for college. On a 14-item list, students placed a check mark next to each behavior they had undertaken. Some sample items are, "visited a college campus" and "taken the SAT or ACT." Responses were coded as 0 for "no" and 1 for "yes" as indicated by the absence or presence of a check mark. The sum of these binary responses created the aggregate score of the student's college preparation behaviors.

Caregiver demographic information. Caregivers indicated their relationship to the student by selecting the appropriate label (mother, father, grandparent, other relative, guardian, or other). Caregivers indicated their education level by checking off their highest level of education on a 10-point scale. Choices ranged from "less than high school" to "doctoral or professional degree." They similarly reported household income level on an 11-point scale with choices ranging from "under $10,000 yearly" to "over $100,000 yearly."

Results

Descriptive statistics and bivariate correlations for all variables are reported in Table 1. Pairwise deletion was used to address missing data for these bivariate correlations. A series of linear regression models were used to test the study hypotheses. To address the issue of missing data, Full Information Maximum Likelihood (FIML) estimation was used within a structural equation modeling (SEM) framework for these regression models. Caregiver expectations and teacher expectations were the main predictors of interest. The main outcome variables were Grade 12 GPA and college search behaviors, analyzed in separate models. All models controlled for the student's Grade 5 achievement, family income, and caregiver education level.

Caregiver Expectations

As seen in Figure 1, the majority of female caregivers had high attainment expectations for their children, with 85.8% of caregivers expecting their child to obtain a bachelor's degree or higher (M=5.62, SD=1.35). The average Grade 5 caregiver educational utility beliefs score was 3.87 (SD=0.70), which was 0.87 points above the midpoint of the scale.

The first linear regression models tested the hypothesis that caregiver expectations in Grade 5 would predict Grade 12 GPA and college search behaviors. With Grade 5 achievement, family income, and caregiver education level controlled, caregivers' expectations in Grade 5 did not significantly predict Grade 12 GPA (b = 0.03, p = 0.61), but they did have a marginally significant, positive association with the number of college search behaviors the student completed in Grade 12 (b = 0.41, p = 0.07). In other words, a one point increase in caregivers' educational expectations was associated with a 0.41 increase in the number of college search behaviors completed by the student in Grade 12. This result provides limited support for my hypothesis that caregivers' expectations in Grade 5 for their child's educational attainment would predict students' college preparation behaviors and academic performance in Grade 12. See Table 2 for full regression results.

I also predicted that caregiver educational utility beliefs would positively correlate with Grade 5 caregiver expectations, Grade 12 GPA, and Grade 12 college search behaviors. However, I did not expect to find that caregiver educational utility beliefs would fully account for the relationship between caregiver expectations and Grade 12 student outcomes. As seen in Table 1, the correlation between caregiver educational utility beliefs and caregiver educational expectations (r = .109, p = .13) was weak and non-significant. However, correlations between caregiver educational utility beliefs and Grade 12 GPA (r = .248, p = .02) and Grade 12 college

search behaviors (r = .203, p = .03) were both statistically significant. Because educational utility beliefs were not significantly correlated with educational expectations, a mediation analysis to confirm that educational utility beliefs partly accounted for the effect of expectations on student outcomes was not warranted. Taken together, these results support my hypothesis that caregiver's educational utility beliefs would not account for the association between caregivers' educational expectations and Grade 12 outcomes, yet they do not support my prediction that expectations would be correlated with educational utility beliefs.

Teacher Expectations

As seen in Figure 2, teacher educational attainment expectations were bimodally distributed with expectations centering around high school completion (25.3%) or 4-year degree completion (30.7%) (M=3.89, SD=1.66). Students' classroom engagement in Grade 5 had a mean score of 3.53 (SD=0.42) —which was 1.03 points above the scale's midpoint.

The second set of linear regression models tested my third hypothesis that teacher expectations in Grade 5 would predict Grade 12 GPA and college search behaviors. With Grade 5 achievement, family income, and caregiver education level controlled, results indicated that Grade 5 teacher expectations were positively related to students' Grade 12 GPA (b = 0.11, p = 0.05) such that a one point increase in teachers' expectations was associated with a 0.11 increase in students' Grade 12 GPA. Grade 5 teacher expectations were also a positive predictor of students' Grade 12 college search behaviors (b = 0.46, p = 0.04) such that a one point increase in teachers' expectations was associated with a 0.46 increase in the number of college search behaviors completed by the student in Grade 12. Therefore, these results supported my third hypothesis that Grade 5 teacher expectations would predict both Grade 12 GPA and Grade 12 college search behaviors. See Table 3 for full regression results.

My final prediction was that student classroom engagement in Grade 5 would be positively correlated with teacher expectations in Grade 5. As shown in Table 1, students' classroom engagement in Grade 5 was indeed positively correlated with Grade 5 teacher expectations ($r = .38$, $p < .001$), thus supporting this fourth hypothesis.

Discussion

The primary goal of the current study was to identify social factors that are associated with predictors of college matriculation in African-American youth. Using longitudinal data collected from African-American students in Grades 5 and 12, I examined the relations between female caregiver and teacher expectations of students' future educational attainment in fifth grade and the students' academic performance and college preparation activities in twelfth grade. In doing so, I hoped to highlight early predictors, beyond academic achievement, of students who will need more support in getting to college later on. Although I did not directly explore the mechanisms through which a successful intervention might operate, understanding what factors may pinpoint the students in need of extra support is a key first step.

Within this data set, caregiver expectations in Grade 5 predicted college preparation behaviors in Grade 12, but had no significant association with Grade 12 academic performance. It is prudent, however, to note that caregiver expectations only predicted college preparation behaviors at an alpha level of .1, indicating that these results should be interpreted with caution. Furthermore, caregiver educational utility beliefs did not significantly account for the relation between expectations and college search behaviors, nor were they correlated with caregiver educational expectations. Findings also revealed that Grade 5 teacher expectations were positively associated with both Grade 12 academic performance and college search behaviors. These teacher expectations were positively correlated with student school engagement, but it is

unclear whether a causal relationship exists between these variables. However, this result does not contradict my earlier discussion of how teacher expectations may be based upon accurate assessments of students' characteristics including engagement and motivation.

Results did not support my expectation that caregivers' educational utility beliefs would be related to caregivers' educational attainment expectations. The use of a subset of items from a scale to measure educational utility beliefs likely played a role in this discrepancy. Caregivers' educational expectations for their children may be more "child-specific" than the general educational utility beliefs captured by the measure used in this study. It may be the case that caregivers' general educational utility beliefs do not reflect how valuable they find educational attainment to be for their specific child. For instance, African-American caregivers may be aware that race gaps and discrimination exist in employment at all levels of education (Pew Research Center, 2016). These structural disparities can lead to differences in educational utility beliefs by racial and ethnic groups (Taylor et al., 1994). However, the measure of educational utility beliefs used in this study does not capture these potentially nuanced beliefs caregivers may hold that would apply to this sample of African-American students. Instead, caregivers' average educational utility belief score may have reflected their general belief in the high value of education for most of the population. Although caregivers' specific beliefs about the value of education for their and their child's racial and ethnic group might correlate with the educational expectations they hold, this distinct set of beliefs was not reflected in the present study.

Several potential explanations also exist for why caregiver expectations were related to Grade 12 college search behaviors but not GPA (unlike Grade 5 teachers' expectations, which predicted both). For one, it may be the case that caregivers have less accurate impressions of their child's academic potential than teachers. Whereas teachers interact with students in the

classroom and directly assess the student's academic performance, caregivers spend much less time critically and systematically evaluating their child's academic ability. Moreover, as seen in Figure 1 and corroborated by previous research (Davis-Kean, 2005; Goldenberg et al., 2001; Spera et al., 2009), caregivers generally high expectations might be an overestimate of their child's academic potential. Although caregivers with high expectations —as opposed to those with lower expectations— were more likely to have children who completed slightly more college preparation behaviors, they were no more likely to have children with a substantially higher Grade 12 GPA. Similar to other research (Benner & Mistry, 2007), Figure 2 indicates that teachers in this sample have a nuanced view of how a student's academic abilities compare to his or her peers, thus allowing them to assess students' academic abilities more "objectively" than the students' caregivers. For example, in this study, students with teachers who reported high expectations were more likely to have a higher GPA and complete more college search behaviors later on in comparison to their peers with low teacher expectations. Caregivers have a less clear picture of what average or above average academic performance might look like, thus leading to high educational attainment expectations that would not correspond to students' actual academic achievement.

However, college search behaviors may be more directly tied to the influence of caregivers. Caregivers who expect their child to go on to college might support their child in the college search process regardless of that child's academic performance. One does not necessarily need to be a high-achiever to take the SAT or attend a college fair, for instance. Whereas academic performance might be influenced more directly by a variety of other factors, college search behaviors might be affected more easily by external support for college attainment. Caregiver expectations for attending college starting in an early grade might therefore instill

additional expectations that a student will engage in college search behaviors when the time comes. Even if caregiver expectations have little influence on academic performance, they still might shape the behaviors related to educational attainment that caregivers encourage. Limited research has examined the relationship between caregivers' support for college preparation and students' academic performance, making this an area requiring future study.

Because teachers spend a great deal of time during the week observing children's academic performance and behavior in the classroom, they are able to form an accurate idea of how a child chooses to act and engage in school. Even though a student's Grade 5 teacher is no longer directly interacting with that student in Grade 12, that teacher may have detected individual characteristics that carry forward to later grades. Some of these characteristics, such as student school engagement and academic motivation, likely affect outcomes such as GPA and college preparation behaviors —outcomes that influence subsequent level of educational attainment (Easton et al., 2017; Roderick, Coca, & Nagaoka, 2011). When teachers make predictions about students' educational attainment, they are likely drawing on observations of these individual characteristics. Whereas caregivers might create environments or directly interact with their children in ways that shape their academic outcomes, teachers might act as astute observers in positions that allow them to make more "accurate" judgments of students' abilities and potential (Jussim et al., 1996).

The positive and significant correlation between teacher expectations and student school engagement hints at one student characteristic that teachers may be drawing on to form their expectations. As Table 1 shows, student engagement in Grade 5 is indeed correlated with Grade 12 GPA and Grade 12 college search behaviors, indicating that these variables potentially have a shared underlying cause. Considering the moderate strength of these correlations though, it is

unlikely that Grade 5 student engagement is the sole attribute responsible for Grade 12 GPA and college search behaviors or the only student characteristic informing teachers' expectations. Similar to the Matthew effect, it may be the case that students who are engaged and motivated to do well in school in earlier grades start down a self-reinforcing path of increased motivation and engagement (Pfost, Hattie, Dörfler, & Artelt, 2014; Stanovich, 1986; Walberg & Tsai, 1983). As previous research has shown, those students who display high levels of engagement receive more positive feedback from teachers, among other benefits, that then lead to increases in school engagement and higher performance (Klem & Connell, 2004; Skinner & Belmont, 1993). However, the correlational analyses in this study cannot confirm that these variables are causally related. Further examination is needed to establish whether teachers incorporate students' school engagement into their expectations because of its effect on students' academic performance.

Directions for Future Research

Future research should also attempt to establish if caregiver and teacher expectations significantly predict later outcomes from even earlier grades. If expectations play a relevant role in student outcomes earlier than Grade 5, then there is more time available to intervene for students needing more support. This earlier intervention and increased support could be more effective and less costly than later, intensive interventions. More can be learned as well about the role caregivers play in students' college preparation and how this role is related to caregivers' beliefs about their child's academic potential. For example, previous research has shown that certain parental behaviors such as discussing education-related topics with one's child and volunteering at the child's school are positively related to probability of enrolling in college (Perna & Titus, 2005) while other studies have shown that these parental involvement behaviors are related to parents' educational expectations (Charles et al., 2007; Zhan, 2005). Examining the

links between parental beliefs, parental behaviors, and student outcomes would contribute to this area of research. Future research examining the association between early teacher and caregiver expectations and later academic outcomes should also investigate exactly which criteria these adults rely on when forming their expectations. This line of study would help to establish what type of relationship exists between these criteria and actual student outcomes.

Additionally, a clearer understanding of *why* expectations of educational attainment predict academic performance and college search behaviors could be gained through further examination. Do caregivers' and teachers' educational expectations create self-fulfilling prophecies by influencing their interactions with students in ways that shape academic performance? Or are caregiver and teacher expectations merely informed by other student characteristics that lead to these academic outcomes? Previous experimental research has attempted to support the self-fulfilling prophecy argument for achievement outcomes with controversial results (Brophy & Good, 1970; Jussim et al., 1996; Jussim & Harber, 2005; Raudenbush, 1984; Rosenthal, & Jacobsen, 1968; Rubie-Davies et al., 2006). These experimental paradigms could be revisited to assess whether this phenomenon might exist for college preparation behaviors. As discussed before, caregivers and teachers might influence these student behaviors more easily than students' academic performance. Longitudinal studies of how changes in caregivers' and teachers' educational expectations are related to changes in students' characteristics and performance could supplement these studies. Establishing how these variables may serve as predictors of one another could address both of these questions.

Implications

This study contributes to literature on the relationship between early parent and teacher expectations and later student outcomes that predict college attainment. It provides evidence that

attainment expectations held by caregivers and teachers in elementary school can be used to predict student achievement and behaviors in high school. Knowing this provides earlier opportunities to intervene with students who are otherwise unlikely to go on to college. If caregivers and teachers can recognize as early as elementary school that a student might struggle to obtain a college education, there is a wider window of opportunity for intervening to boost this student's academic potential. Finding ways to support these students in earlier grades instead of later on when the student is even closer to finishing high school should be less costly. Helping a student "catch up" to their college bound peers requires less time and effort when these differences are smaller in elementary school than at the end of high school.

Interventions such as these are important because attainment of a college degree has long been shown to provide individuals with greater access to economic opportunities. Although tuition rates and student-loan debt levels continue to rise, the lifetime earnings premium for obtaining higher education remains significant (Daly & Bengali, 2014). For those with a bachelor's degree, unemployment rates are two percentage points lower and median earnings are 67% higher than they are for those with just a high school diploma (Ma et al., 2016). Furthermore, opportunities for socioeconomic mobility favor those with higher levels of education (Ma et al., 2016).

Even though a considerable Black-White earnings gap persists at high levels of education, the wage premium for earning a higher education is notable in every racial and ethnic group (Carnevale, Rose, & Cheah, 2011). Yet despite the universally experienced benefits to obtaining a college education, there are widely differing rates of higher education attainment for racial and ethnic groups (Charles et al., 2007; Musu-Gillette et al., 2017). As such, there is room

for improvement in terms of increasing representation among these demographic groups in higher education.

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Table 1

Means, Standard Deviations, Sample Size, and Bivariate Correlations for Key Variables

	M (SD)	*n*	1	2	3	4	5	6
1. Grade 5 caregiver educational expectations	5.62 (1.35)	247	–					
2. Grade 5 teacher educational expectations	3.89 (1.66)	277	.359**	–				
3. Grade 5 caregiver educational utility beliefs	3.87 (0.70)	199	.109	.182*	–			
4. Grade 5 student engagement in school	3.53 (0.42)	375	.154*	.384**	.126	–		
5. Grade 12 student GPA	2.60 (0.91)	265	.236*	.248*	.248*	.184*	–	
6. Grade 12 student college search behaviors	8.60 (3.61)	324	.255**	.332**	.203*	.210**	.484**	–

Note: *Correlation is significant at the 0.05 level **Correlation is significant at the 0.01 level

Table 2

Summary of Linear Regression Analyses of Caregiver Expectations and Students' Grade 12 GPA and College Search Behaviors

Variable	Grade 12 GPA				Grade 12 College Search Behaviors			
	B	*SE*	*z*	*p*	*B*	*SE*	*z*	*p*
Grade 5 caregiver educational expectations	0.030	0.058	0.510	0.610	0.413*	0.228	1.808	0.071
Grade 5 student achievement	0.022***	0.003	7.767	0.000	0.025**	0.012	2.032	0.042
Grade 5 family income	0.017	0.031	0.536	0.592	0.021	0.127	0.169	0.866
Grade 5 caregiver level of education	0.037	0.041	0.903	0.367	0.224	0.162	1.384	0.166
Constant	1.200***	0.295	4.076	0.000	3.915***	1.165	3.361	0.001
χ^2	61.083			0.000	21.662			0.000
df	4				4			
CFI	1.00				1.00			
TFI	1.00				1.00			
RMSEA	0.00				0.00			

Note: $N = 483$ for model using Grade 12 GPA as outcome of interest. $N = 495$ for model using Grade 12 college search behaviors as outcome of interest. *$p < .1$ ** $p < .5$ *** $p < .001$

Table 3

Summary of Linear Regression Analyses of Teacher Expectations and Students' Grade 12 GPA and College Search Behaviors

Variable	Grade 12 GPA				Grade 12 College Search Behaviors			
	B	*SE*	*z*	*p*	*B*	*SE*	*z*	*p*
Grade 5 teacher educational expectations	0.106*	0.055	1.926	0.054	0.456**	0.218	2.094	0.036
Grade 5 student achievement	0.018***	0.003	5.454	0.000	0.015	0.014	1.033	0.302
Grade 5 family income	0.015	0.031	0.506	0.613	0.012	0.126	0.099	0.921
Grade 5 caregiver level of education	0.021	0.043	0.492	0.623	0.214	0.163	1.316	0.188
Constant	1.199***	0.055	9.032	0.000	4.955***	0.747	6.629	0.000
χ^2	66.094			0.000	25.254			0.000
df	4				4			
CFI	1.00				1.00			
TFI	1.00				1.00			
RMSEA	0.00				0.00			

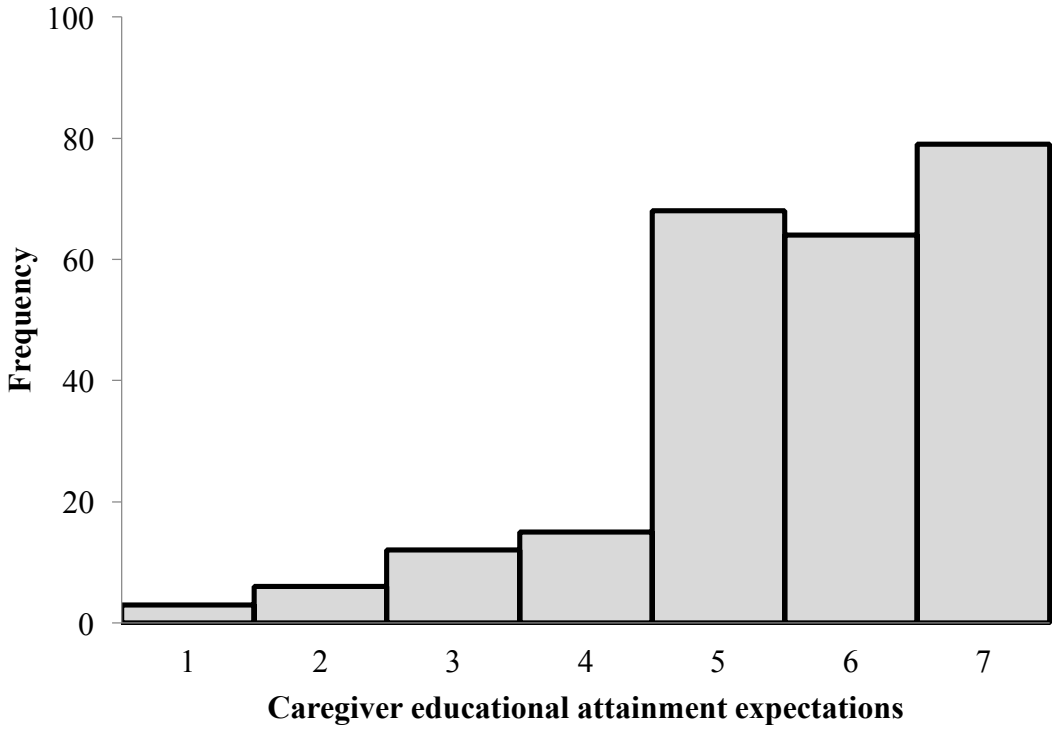
Note: $N = 486$ for model using Grade 12 GPA as outcome of interest. $N = 498$ for model using Grade 12 college search behaviors as outcome of interest. *$p < .1$ ** $p < .5$ *** $p < .001$

Figure Captions

Figure 1. Grade 5 Caregiver Educational Expectations

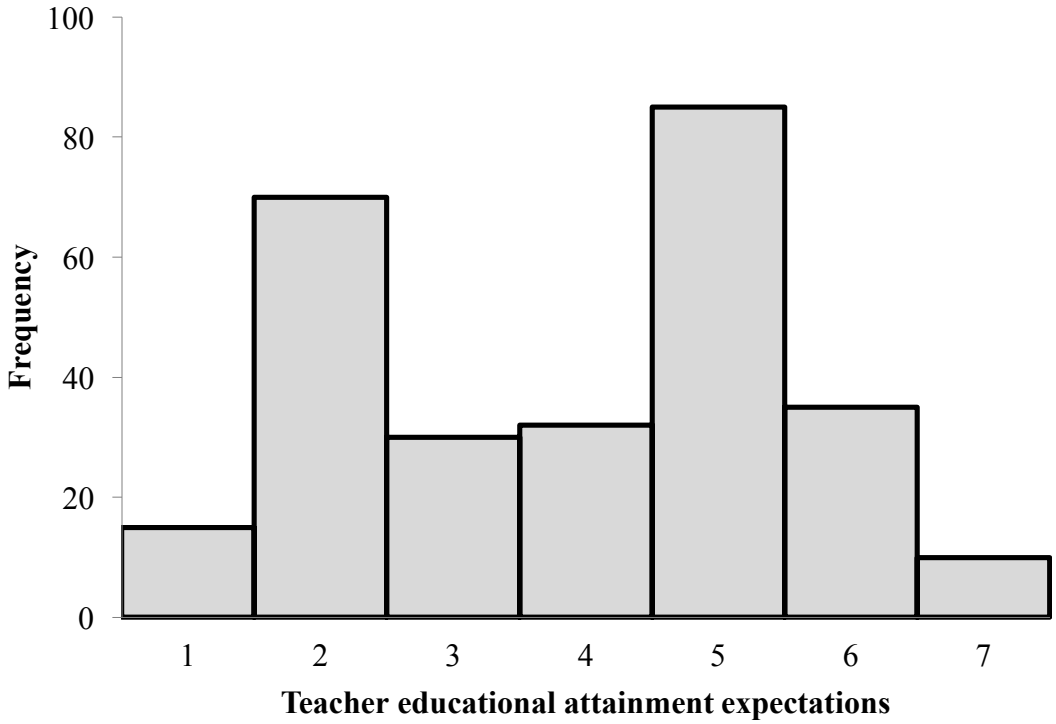
Figure 2. Grade 5 Teacher Educational Expectations

Figure 1.



1 = some high school
2 = finish high school
3 = some college
4 = finish community college
5 = finish a 4-year college
6 = Master's degree
7 = Doctoral degree

Figure 2.



1 = some high school
2 = finish high school
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4 = finish community college
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7 = Doctoral degree

Appendix A: Study Measures

Caregiver educational utility beliefs:

1. Education is key to job success for Blacks.
2. The way for poor to become middle class is to get good education.
3. Doing well in school helps you do better in life.
4. Education usually pays off in the future for Blacks.
5. Education is a practical road to success for Blacks.
6. Achievement in school will get you a good job.
7. Education is the key to success.

Student's school engagement (* = reverse coded items):

1. I participate when we discuss new material.
2. I work hard when we start something new in class.
3. The first time my teacher talks about a new topic I listen carefully.
4. When we start something new, I practically fall asleep.*
5. My mind wanders when my teacher starts a new topic.*
6. I never seem to pay attention when we begin a new subject.*
7. If a problem is really hard, I keep working at it.
8. When I run into a difficult question, I try even harder.
9. If I can't get a problem right the first time, I just keep trying.
10. When I do badly on a test, I work harder next time.
11. When I have a hard question or problem in class, I don't even try.*
12. When I come to a problem that I can't solve right away, I just give up.*
13. If a problem is really hard, I just quit working on it.*

14. If I don't understand something right away, I stop trying.*
15. When I have trouble understanding something, I give up.*

Student's college preparation behaviors:

1. Chosen high school classes because they would improve your chances of getting into college
2. Visited a college campus
3. Visited more than one college campus
4. Researched colleges online
5. Attended a college fair
6. Talked to someone about getting into college
7. Applied to college
8. Talked with your parents about how to pay for college
9. Looked for financial aid or scholarships
10. Visited a friend who goes to college
11. Taken a prep course for the SAT or ACT
12. Used a book or CD to study for the SAT or ACT
13. Taken the SAT or ACT
14. Taken the SAT or ACT more than once